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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 11

Application Number: 09/303,802
Filing Date: April 30, 1999
Appellant(s): YOUNG ET AL.

Nathan O. Jensen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 09/20/2003.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct. Note, the claims on appeal are the claims associated with Amendment A (paper number 4), filed on 7/9/2002.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. Note, the claims on appeal are the claims associated with Amendment A (paper number 4), filed on 7/9/2002.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 20-22 stand together as a single group (Group A), claim 24 stands as a separate group (Group B), claims 25-29 stand as a separate group (Group C), claim 1 stands as a separate group (Group D), claim 2 stands as a separate group (Group E) and claim 23 stands as a separate group (Group F). Note, the appellant has not provided any reasons for such groupings.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix 1 to the brief is correct. The copy of the appealed claims contained in the Appendix 2 to the brief is incorrect since the amendments to claim 25 does not overcome the 35 USC 112 second paragraph rejection.

(9) Prior Art of Record

5,719,868	YOUNG	2-1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

I. Claims 20-22 and 24-29 are rejected under 35 U.S.C. 112 second paragraph. This rejection is set forth in prior Office Action, Paper No. 5.

II. Claims 1,2 and 23 are rejected under 35 U.S.C. 103(a). This rejection is set forth in prior Office Action, Paper No. 5.

The rejections are hereby presented for clarity and convenience.

I. Claims 20-22 and 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 step (d) recites, "...including within a clique with said one of the nodes...a node in said second group of nodes that communicates directly with said one of the nodes node and with said node in said first group of nodes..." This limitation is confusing; it is unclear whether plural groups of nodes make up a clique and also unclear which node(s) of which group(s) of which clique(s) are directly communicating.

Claims 21 and 22 are rejected because they depend on claim 20.

Claim 24 is confusing because it recites of a step (f) while its parent claim (claim 1) does not recite any earlier steps, namely, (a) - (e).

Claims 25 –29 are rejected because they depend on claim 24.

Claim 25 recites "...cliques having at least as many neighboring clique as any neighboring clique..." in lines 3 and 4. It is unclear what is meant by 'at least as many neighboring clique as any neighboring clique'.

Claims 26-29 are also rejected because they depend on claim 25.

II. Claims 1, 2 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,719,868 to Young, hereafter referred to as Young.

Referring to claim 1, Young discloses a method for automatically managing the communication channel resources between two transceiver nodes having neighboring transceiver

nodes in a network of transceiver nodes (a method for automatically managing the communication channel resources between two nodes having neighboring nodes in a network of transceiver nodes (see figures 1 and 2 and column 7 lines 20-22)), wherein each node communicates during specific timeslots and uses multiple frequencies on a time multiplex basis (each node communicates during specific timeslots and uses multiple frequencies on a time multiplex basis (see figure 2 and column 7 lines 23 and 24)), the method comprised of storing possible communication timeslots and frequencies between nodes in the network at each transceiver node (storing a table of possible communication timeslots and frequencies between nodes in the network at each node (see figure 2 and column 7 lines 26 and 27)), assigning each node to at least one of a plurality of cliques (the nodes are grouped into 'neighborhoods' (see figure 1)), wherein multiple transceiver nodes in a clique utilize the same timeslot for transmitting (the nodes use the same timeslots and different frequencies for transmitting data (see figure 2 and claim 1)). Young does not explicitly disclose of cliques (neighborhoods) wherein each clique consists only of nodes that directly communicate with each other (note, this implies that all the nodes of the clique are only one hop distance apart). However, it is well known in the art that communication between nodes of a network consisting of a small number of hops operate faster than a network consisting of a larger number of hops. For example, a message will move faster through a network with a smaller number of hops because there is less time spent on processing and routing of the message through each hop. Therefore, it would have been obvious to one skilled in the art at the time of the invention to utilize the system taught by Young but limiting the 'neighborhoods' to only include nodes that directly communicate with each other because doing so would provide for faster message communications.

Referring to claim 2, Young discloses the method discussed above. Furthermore, Young discloses that the nodes within a clique take turns transmitting within a shared timeslot (each node shares a broadcast timeslot (slot 24a (or slot 0) of figure 2), which each node uses for sending control packets (see column 2 lines 26-35)).

Referring to claim 23, Young discloses the method discussed above. Furthermore, Young discloses choosing timeslots for each clique (identifying, in tables, the transmit timeslot for each node in a neighborhood, thus assignment of timeslots to the neighborhood is chosen (see claim 1)).

(11) Response to Argument

A. Response to arguments regarding the 35 U.S.C. 112 second paragraph rejections of claims 20-22 and 24-29:

On page 7 last paragraph through page 9 third paragraph, the Applicant discusses the amendments that have been made to the claims to overcome the 35 USC 112 second paragraph rejections and has filed these amendments concurrently with the Appeal Brief (paper number 10). However, the amendment to claim 25 does not overcome the 35 USC 112 second paragraph rejection and therefore the Amendment C, has not been entered. (note, Amendment A are the claims of record)

B. Response to arguments regarding the 35 U.S.C. 103(a) rejections of claims 1,2 and 23:

On page 10 last paragraph regarding claim 1, the Applicant contends that the Examiners reasons of combining are in error because it is arguable whether increasing or decreasing the number of hops would make the communications between the nodes of Young quicker. The Examiner respectfully disagrees. When packets need to be routed between transmitting and receiving nodes and there are any intermediate nodes that the packets must first traverse, then there must be extra processing done at the intermediate nodes, which would physically and definitely slow down the speed at which the packets are communicated between the transmitting and receiving nodes. Conversely, if the nodes where only one hop apart (i.e. directly communicating) the communication between the transmitting and receiving node would be faster. This observable fact is evident in US patent 5,872,930 to *Masters et al.*, which is incorporated into this Examiners Response (see Appendix). *Master et al.* shows a system where server nodes are only one hop away and wherein messages communicated between these server nodes will be delivered faster since less computation time is needed to make routing decisions, whereas if there are more than one hop (i.e. two or more) between the server nodes the delivery latency of the messages increases because of the increased number of hops (see column 9 lines 23-30 and column 9 lines 34-37). Therefore, indeed it would have been obvious to one skilled in the art at the time of the invention to reduce the number of hops between the nodes in Young because doing so would increase the speed at which the packets are communicated. Furthermore, although the Examiner has previously conceded that Young does not disclose that the nodes in a neighborhood communicate directly, a closer look at Young reveals a strong indication that, in fact, some of the nodes in the neighborhoods of Young may communicate directly. Namely, figure 1 shows three neighborhoods 8,1 and 4 (see the dashed circles). In both

neighborhoods 8 and 4, nodes 8 and 4 do indeed communicate directly with all other nodes in their neighborhood. Also, referring to neighborhood 1, Young discloses in column 1 lines 16-26, that node 1 broadcasts to all nodes in its neighborhood that are within line-of-site or one hop from the transmitter, all of which indicates that the nodes in the neighborhoods of Young do communicate directly.

On page 10, last paragraph through page 11 first paragraph also regarding the rejection of claim 1, the Applicant contends that the invention could not be arrived at with the Young reference because the Examiner failed to show how a limitation of claim 1 was met, addressed or rendered obvious. Specifically, the Applicant contends that the limitation of claim 1, which recites "multiple transceiver nodes in a clique utilize the same timeslot for transmitting", has not been addressed by the Examiner and that it has not been addressed because Young does not teach or disclose that the nodes use the same timeslot for transmitting. Furthermore, the Applicant argues that Young teaches the opposite. The Examiner respectfully disagrees. As shown in figure 2 and column 2 lines 26-35, Young discloses a system wherein N frames are transmitted from N nodes of a neighborhood. Each frame comprises a set of timeslots 0 to (M-1), wherein different nodes transmit data during the same timeslots (i.e. timeslots 1 to (M-1)). Different nodes can communicate during the same timeslots because they each use different frequencies (i.e. frequencies 0 to (F-1)). In other words, if two transmitting nodes want to communicate messages with a receiving node at the same time, they can use the same timeslot but they must transmit these messages at different frequencies, which will allow the receiving node to acquire the proper messages from the proper corresponding transmitting node. Therefore, Young does indeed teach that nodes of the neighborhoods utilize the same timeslots, as recited in claim 1.

Furthermore, Young also teaches that the timeslot 24a (slot 0) is assigned to all of the nodes, wherein each node takes turns transmitting in this timeslot, such that during a particular cycle each of N nodes uses timeslot 0 in its corresponding Nth frame, in order to transmit control information. Hence, all the nodes transmit during the same timeslot (i.e. timeslot 24a (or timeslot 0)), which also anticipates this limitation of the claim. Note, the Examiners failure to explicitly discuss this limitation in the Final Office Action (Paper number 5), may have been merely a typographical error (i.e. accidental deletion or inadvertently forgetting to write it in the rejection). Nonetheless, claim 2 shows a similar limitation as this one and the Examiner did show how Young teaches the limitation of claim 2, as discussed below.

On page 11 paragraph 2 through page 12 paragraph 2 regarding the rejection of claim 2, the Applicant contends that Young does not disclose each node sharing a broadcast timeslot and relies on column 2 lines 26-35 as evidence to support this contention. The Examiner respectfully disagrees. In fact, this section of Young *clearly* shows how Young *does* anticipate the limitation of Claim 2. As shown in figure 2 and column 2 lines 26 through 35, Young discloses that a broadcast timeslot 24a (slot 0) is assigned to all of the nodes, wherein each node takes turns (shares) transmitting in this timeslot, such that during a particular cycle, each of N nodes uses timeslot 0 in its own corresponding Nth frame, in order to transmit control information. Hence, all of the nodes share the same timeslot (i.e. timeslot 24a (or timeslot 0)).

On page 12 paragraph 3 regarding the rejection of claim 23, the Applicant argues that Young does not disclose choosing timeslots for each clique and that the timeslot assignment is done on a node-by-node basis in the Young reference, whereas the assignment in the present invention is done for groups-of-nodes. The Examiner respectfully disagrees. Firstly, the claim

does not recite that the timeslots are assigned on a 'groups-of-nodes' basis nor does the claim recite that all of the nodes in each clique are assigned the same timeslot. Furthermore, Young discloses that each node uses a timeslot and a frequency for communicating, as shown in figure 2 and claim 1. Since each node is assigned a timeslot and a group of nodes is in a neighborhood, the neighborhoods are also assigned timeslots. Lastly, it is inherent that neighborhoods are assigned these timeslots since that is how communication is to take place in the Young system.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

deo
October 20, 2003

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